



REGIONAL DISTRICT OF ALBERNI-CLAYOQUOT  
**NOTICE OF APPLICATION FOR  
DEVELOPMENT VARIANCE PERMIT**  
ELECTORAL AREA 'D' – SPROAT LAKE

**DVD21009 – DERICK & GWEN RONKAINEN, PROPERTY OWNERS**

On March 9th, 2022, the Regional District of Alberni-Clayoquot (ACRD) will consider issuing the following development variance permit to vary the provisions of the ACRD Zoning Bylaw No. 15, pursuant to Section 498 of the *Local Government Act*:

**Reduce the required front yard setback from 12.2 m (40 ft) to 11 m (36.1 ft) in the Acreage Residential (RA1) District to facilitate construction of a new single family dwelling.**

**Subject Property:** 10485 Lakeshore Road, Port Alberni

**Legal Description:** PARCEL A (DD 89825N) OF LOT 3 DISTRICT LOT 204 ALBERNI DISTRICT PLAN 4600

**PID:** 005-983-819

A copy of the permit and supporting documents are available for public review on our website at <https://www.acrd.bc.ca/events/9-3-2022/>.

The Regional Board made a preliminary review of this proposal on February 9, 2022 and resolved to consider it further. It is anticipated that the Regional Board will make a final decision on the permit at the Board Meeting on March 9, 2022 beginning at 1:30 pm.

Prior to issuing such a permit, the Board is required to notify owners and occupants of properties within 100 metres of the subject property. **Please accept this correspondence as fulfilling this obligation.**

Providing an opportunity for public input is a top priority for the ACRD. Consider written submissions as an effective means to do so.

Correspondence must be received by the ACRD by **10:00 am on Wednesday, March 9, 2022** and can be submitted by one of the following methods:

- Hard copy delivered to the ACRD office in person, in the drop slot or by mail to the Planning Department at the address below.
- Email sent to [planning@acrd.bc.ca](mailto:planning@acrd.bc.ca). Email correspondence will only be considered received if receipt confirmation is provided by ACRD staff.
- Fax sent to 250-723-1327. Fax correspondence will only be considered received if receipt confirmation is provided by ACRD staff.

Alternatively, if you wish to present your views to the Board in person, please contact Wendy Thomson, General Manager of Administrative Services, before 4:30 pm on March 2, 2022 at [wthomson@acrd.bc.ca](mailto:wthomson@acrd.bc.ca) or phone 250-720-2700.

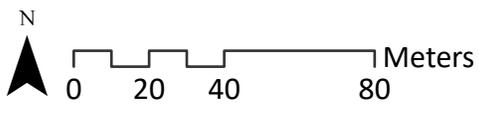
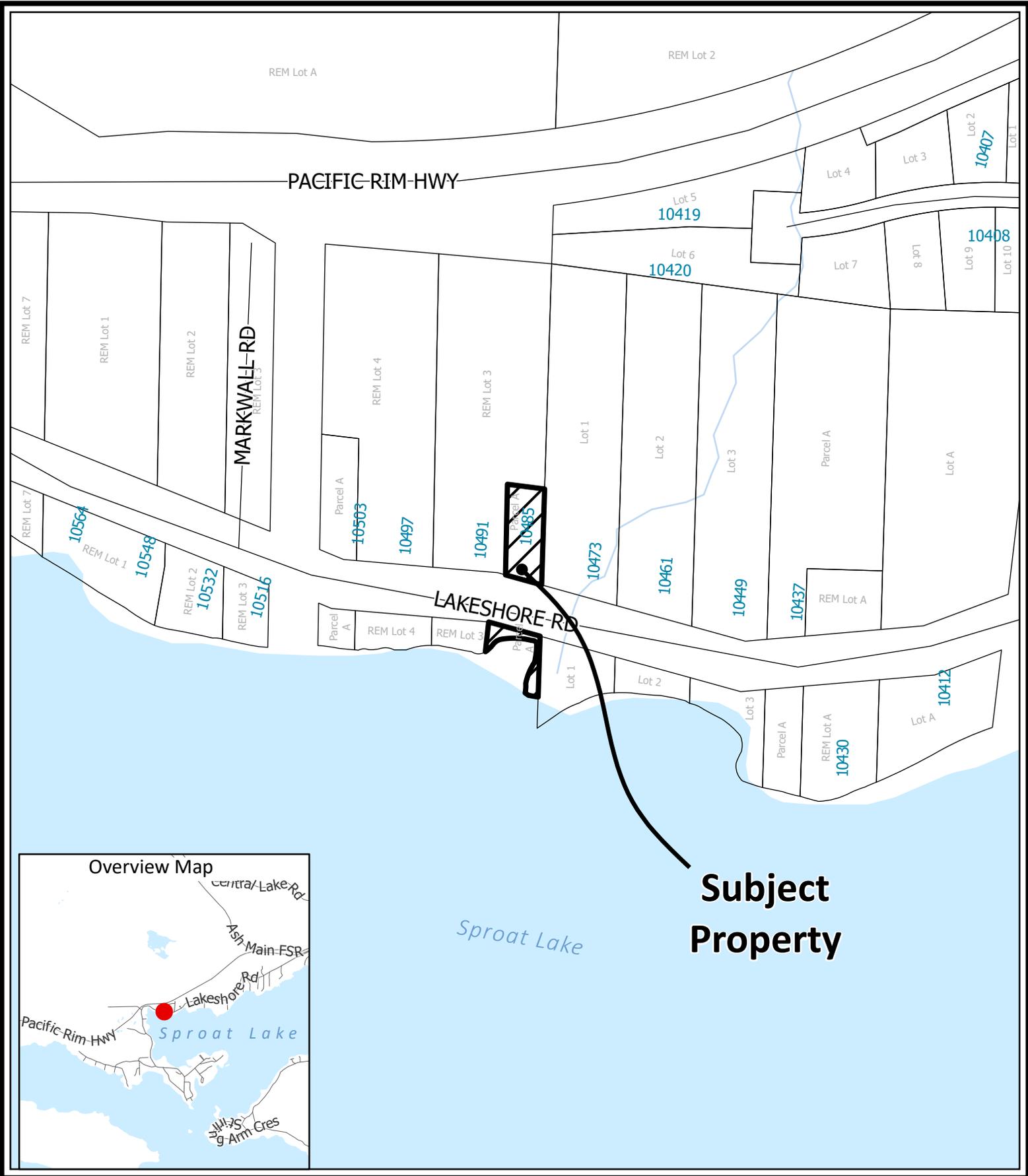
**Questions?** Please contact the Planning Department during regular office hours: Monday to Friday, excluding statutory holidays, from 8:00 am until 4:30 pm.

**PLANNING DEPARTMENT**

Regional District of Alberni-Clayoquot  
3008 Fifth Avenue  
Port Alberni, BC V9Y 2E3

Email: [planning@acrd.bc.ca](mailto:planning@acrd.bc.ca)  
Telephone: 250-720-2700  
Fax: 250-723-1327

**Date of Notice: February 16, 2022**



 Legal description: PARCEL A (DD 89825N) OF LOT 3 DISTRICT LOT 204 ALBERNI DISTRICT PLAN 4600



# ALBERNI-CLAYOQUOT REGIONAL DISTRICT

3008 Fifth Avenue, Port Alberni BC, CANADA V9Y 2E3 Telephone (250) 720-2700 Fax (250) 723-1327

## Development Variance Application

**MEETING DATE:** February 9, 2022

**ACRD FILE NO.:** DVD21009

**APPLICANTS:** Derick and Gwen Ronkainen, Agent – Don Saywell Developments Ltd

### LEGAL

**DESCRIPTION:** PARCEL A (DD 89825N) OF LOT 3 DISTRICT LOT 204 ALBERNI DISTRICT PLAN 4600

**LOCATION:** 10485 Lakeshore Road, Port Alberni

**ELECTORAL AREA:** "D" Sproat Lake

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**APPLICANT'S INTENTION:** The applicants have applied for a development variance permit to reduce the required front yard setback from 12.2 m (40 ft) to 11 m (36.1 ft) in the Acreage Residential (RA1) District to facilitate construction of a new single family dwelling.

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**Recommendation:** THAT the Board of Directors consider issuing development variance permit DVD21009, subject to neighbouring properties being notified as per Local Government Act s.499.

### Development Variance DVD21009:

- i. Development variance of the ACRD Zoning Bylaw, Schedule No. II: Bulk and Site Regulations, to reduce the required front yard setback from 12.2 m (40 ft) to 11 m (36.1 ft) in the Acreage Residential (RA1) District to facilitate construction of a new single family dwelling.

**Procedure:** Prior to the issuance of a development variance permit, the Board must first pass a resolution to consider issuing the permit. Staff then notify neighbouring property owners and residents to afford them the opportunity to make written or verbal submissions to the Board. At a subsequent meeting, the Board issues or denies the development variance permit.

**Sproat Lake Advisory Planning Commission (APC) Recommendation:** The Sproat Lake APC reviewed this application at their January 31, 2022 meeting and passed a motion to support the application.

### Observations:

#### i. Status of Property:

The subject property is 0.09 ha (0.22 ac) in size. Improvements on the property include a small single family dwelling and a sewage disposal system. The property is mostly lawn area

## DVD21009

aside from the sewage disposal system and paved driveway. The parcel is split by Lakeshore Road with a portion, approximately 0.017 ha (0.04 ac) in area, located across the road on the lakefront. A lock-block and concrete wall separates the property from the surrounding parcel to the north and west. The subject property is lower than adjacent properties on all sides.

ii. **Services:**

- a. **Sewage Disposal:** Onsite sewage disposal.
- b. **Water Supply:** Onsite water supply.
- c. **Fire Protection:** Sproat Lake Volunteer Fire Department.
- d. **Access:** Lakeshore Road.

iii. **Existing Planning Policies Affecting the Site:**

- a. **Agricultural Land Reserve:** Not within the Agricultural Land Reserve.
- b. **Official Community Plan:** The Sproat Lake Official Community Plan (OCP) designates the property as "Residential Use". The objective of this designation is to allow for a range of housing options within the OCP area.

The subject property is affected by Development Permit Area I – Riparian Areas Protection (DPA I), which extends 15 m (49.2 ft) from the natural boundary of Sproat Lake. The sketch plan prepared by JE Anderson and Associates indicates the 15 m setback and shows the proposed construction, located on the upland side of Lakeshore Road, is outside of DPA I.

**The proposal complies with the Sproat Lake Official Community Plan. As the proposed construction is outside of DPA I, issuance of a development permit is not required.**

- c. **Zoning:** The property is zoned Acreage Residential (RA1) District.

Building Setbacks		
RA1	Required	Proposed
Front lot line setback:	12.2 m (40 ft)	<b>11 m (36.1 ft)</b>
Rear yard setback:	9.144 m (30 ft)	-
Side yard setback:	4.572 m (15 ft)	-

**The applicant is applying for a Development Variance Permit in order to reduce the required front yard setback from 12.2 m (40 ft) to 11 m (36.1 ft) in the Acreage Residential (RA1) District to facilitate construction of a new single family dwelling.**

**Comments:**

The RA1 District has a minimum floor area for dwelling units of 83.6 sq m (900 sq ft) on the main floor. Due to the lot shape and size, in order to meet this requirement, the footprint of the single family dwelling projects into the front yard setback. The proposed height and siting of the structure complies with the side and rear yard setbacks and height requirements of the RA1 District. The sewage disposal system is located behind the current (and proposed) home at the rear of the property.

**DVD21009**

The subject property is located wholly within the Coastal Flood Construction Level (FCL) as identified by the Somass Watershed Flood Management Plan (SWFMP). Planning staff had recommended that the applicant provide a report from a Geotechnical Engineer certifying that the land may be used safely for the intended construction of a new single family dwelling. This has been completed, and the report is attached. Consideration of a safe flood construction elevation and the registration of a restrictive covenant, with the accompanying report from the qualified professional, will be required at the building permit stage of the project.

Planning staff feel the proposed variance is appropriate and recommend that the Board of Directors consider issuing development variance permit DVD21009, subject to neighbour notification.

Submitted by: *Charity Hallberg Dodds*  
Charity Hallberg Dodds, Planning Technician

Reviewed by: *Alex Dyer*  
Alex Dyer, MCIP, RPP, Planning Manager

Reviewed by: *Daniel Sailland*  
Daniel Sailland, MBA, Chief Administrative Officer

### DVD21009

**DVD21009 – Ronkainen, 10485 Lakeshore Road  
Site Photos taken January 20, 2022**



Looking north towards existing home, from Lakeshore Road.



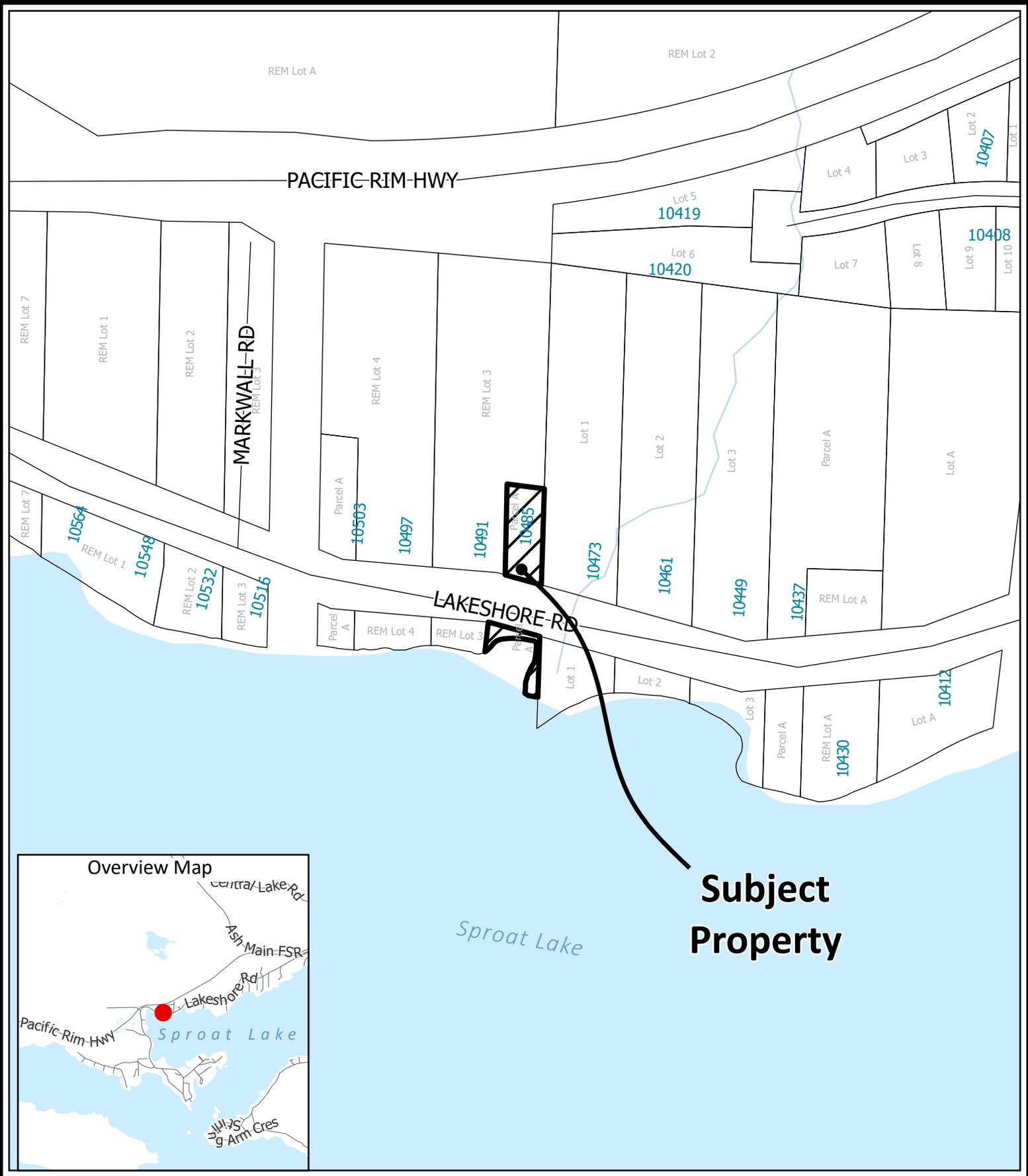
Looking south towards portion of property across Lakeshore Road on the lakefront.



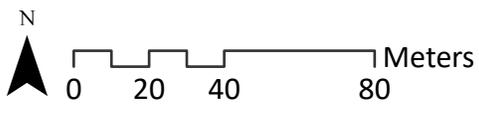
Looking at lock-block and concrete wall, and sewage disposal system area behind the existing home.



Looking south from rear property boundary, standing in front of lock-block and concrete wall.



**Subject Property**



 Legal description: PARCEL A (DD 89825N) OF LOT 3 DISTRICT LOT 204 ALBERNI DISTRICT PLAN 4600

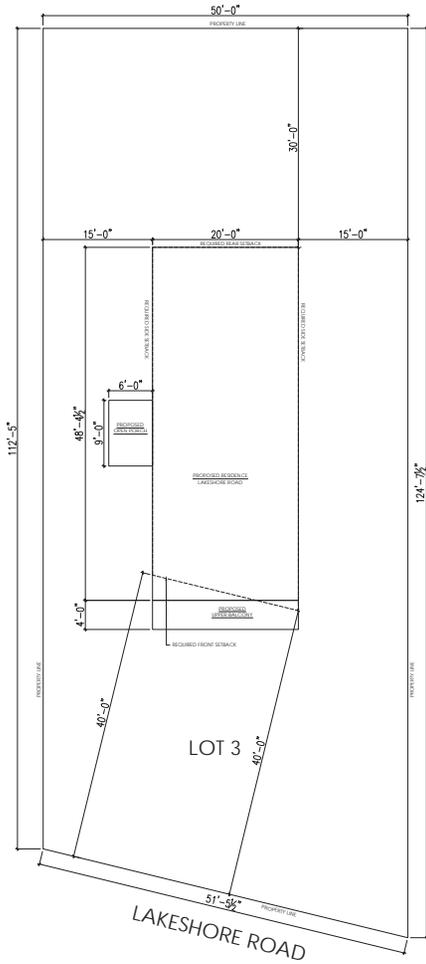
To whom it may concern:

We require a Variance for the following reasons as stated to us by the ACRD:

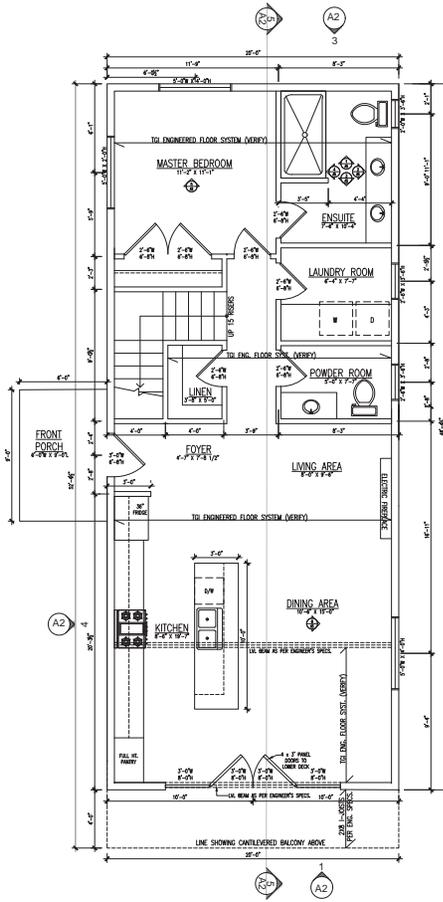
ACRD Zoning Bylaw requires a minimum main floor area (measured from the inside finished surface of the walls) of 900 square feet (83.613 m<sup>2</sup>) in the Acreage Residential District (RA 1). The current plans indicate that the 900 SF minimum will not be met. It's also understood that due to the setback requirements from the front (40'), rear (30') and side lot lines (15'), the allowable building area is less than 900 SF. As discussed, there is a definite hardship with regard to the allowable building envelope and the minimum floor area required by the ACRD Zoning Bylaw due to the size of the property. As such, the plans will need to be revised to meet the minimum floor area requirement and the building's footprint will have to encroach into the required setback distances. A development variance application will be required to vary the setbacks; however, when there is an undeniable hardship such as this, the process is somewhat expedited.

We have attached the revised plans for your consideration.

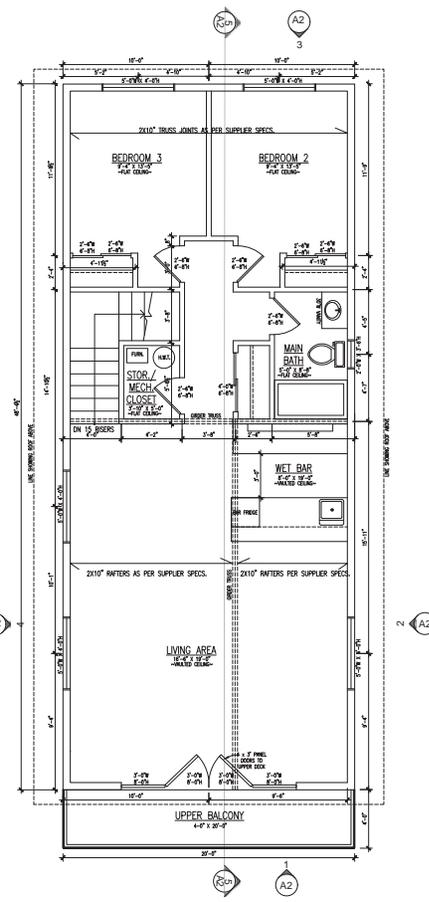
Thank you



1 SITE PLAN  
A1 1/8" = 1'-0"



2 MAIN FLOOR PLAN  
A1 1/4" = 1'-0"



3 UPPER FLOOR PLAN  
A1 1/4" = 1'-0"

LOT DIMENSIONS		
AREA:	SQ. FOOTAGE:	NOTES:
FRONT & BACK	50'-0" 5'-5 1/2"	/
SIDES	112'-5" 124'-7 1/2"	/

REQUIRED SETBACKS		
AREA:	SQ. FOOTAGE:	NOTES:
FRONT	40'-0"	
REAR	30'-0"	
SIDES	15'-0"	

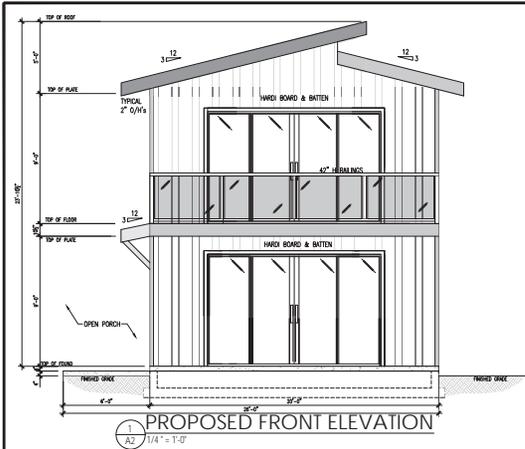
FLOOR AREA SQUARE FOOTAGE		
AREA:	SQ. FOOTAGE:	NOTES:
<b>MAIN FLOOR</b>		
MAIN LIVING	900.00	MEASURED FROM INSIDE FINISHED SURFACE OF WALLS
OPEN PORCH	54.00	/
<b>UPPER FLOOR</b>		
MAIN LIVING	900.00	MEASURED FROM INSIDE FINISHED SURFACE OF WALLS
UPPER BALCONY	80.00	/
<b>TOTAL:</b>	<b>1934</b>	

- GENERAL NOTES**
- ALL CONSTRUCTION MUST COMPLY WITH THE CURRENT BC BUILDING CODE AND MUNICIPAL BYLAWS
  - OWNERS, BUILDERS AND CONTRACTORS MUST CHECK DRAWINGS AND CORRECT WHERE NECESSARY TO ENSURE ALL NOTES AND REQUIREMENTS ARE MET PRIOR TO CONSTRUCTION
  - NOTES BY PROFESSIONAL ENGINEERS, TRUSS SUPPLIERS AND PLAN CHECKERS TO TAKE PRECEDENCE WHERE IN CONFLICT WITH DRAWINGS NOTES
  - THE OWNERS AND BUILDERS TAKE SOLE RESPONSIBILITY FOR ANY DEVIATION FROM THE STRUCTURAL DRAWINGS AND SPECS.
  - ALL WORKMANSHIP SHALL CONFORM TO A STANDARD OF GOOD BUILDING PRACTICE
  - WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE MEASUREMENTS
  - DIMENSIONS FROM OUTSIDE OF EXTERIOR WALLS & FROM THE CENTERLINE OF INTERIOR WALLS U.I.U.O.
  - ALL LUMBER SHALL BE SPF #2 OR BETTER
  - ALL UNITS SHALL BE 2 X12 U.I.U.O.

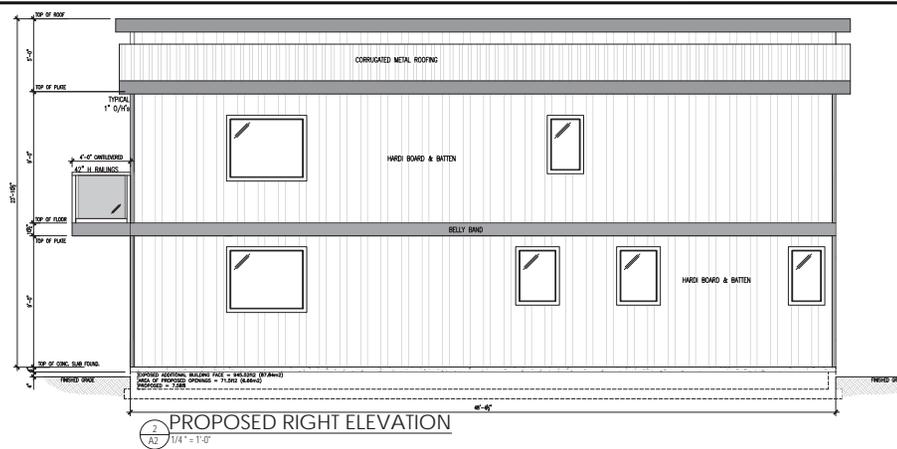
**DEREK & GWEN RONKAINEN**  
10485 LAKESHORE ROAD, PORT ALBERNI, B.C.

MARBAN CONSTRUCTION AND DESIGN  
112 Evelyn Crescent,  
Nanaimo BC, v9x 1a1  
250-616-9601

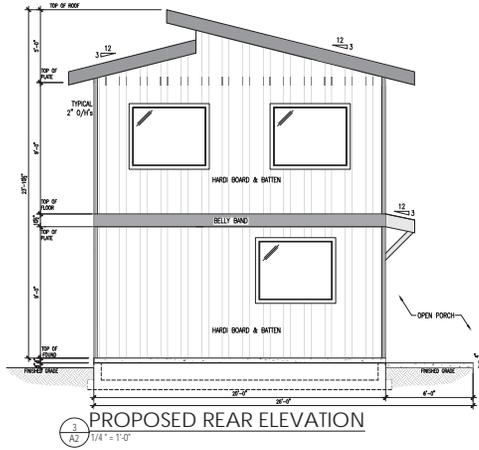
DATE:	REVISED OCT. 26TH 2021
PROJECT:	NEW BUILD
DRAWING:	SITE PLAN & FLOOR PLANS
SCALE:	AS NOTED
DRAWN BY:	RACHEL BALAN
DRAWING NO.	



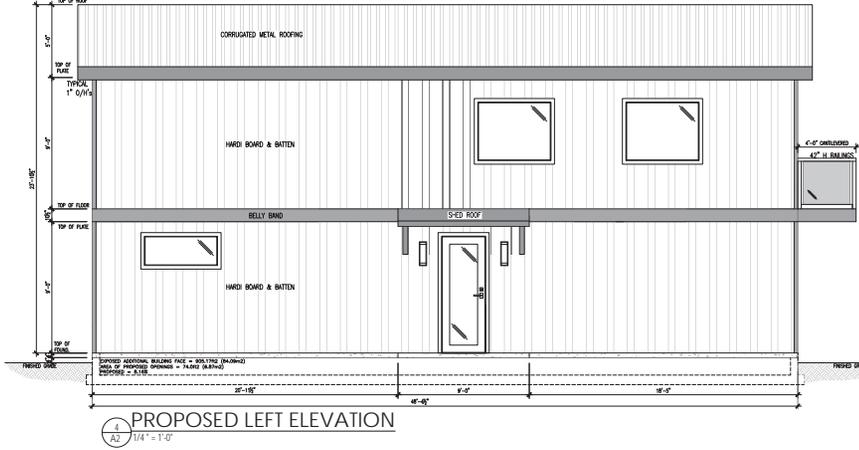
1 PROPOSED FRONT ELEVATION  
A2 1/4" = 1'-0"



2 PROPOSED RIGHT ELEVATION  
A2 1/4" = 1'-0"



3 PROPOSED REAR ELEVATION  
A2 1/4" = 1'-0"



4 PROPOSED LEFT ELEVATION  
A2 1/4" = 1'-0"

**THERMAL CHARACTERISTICS OF BUILDING ASSEMBLIES** (CBC (9.36.2.6 - 9.36.2.8))

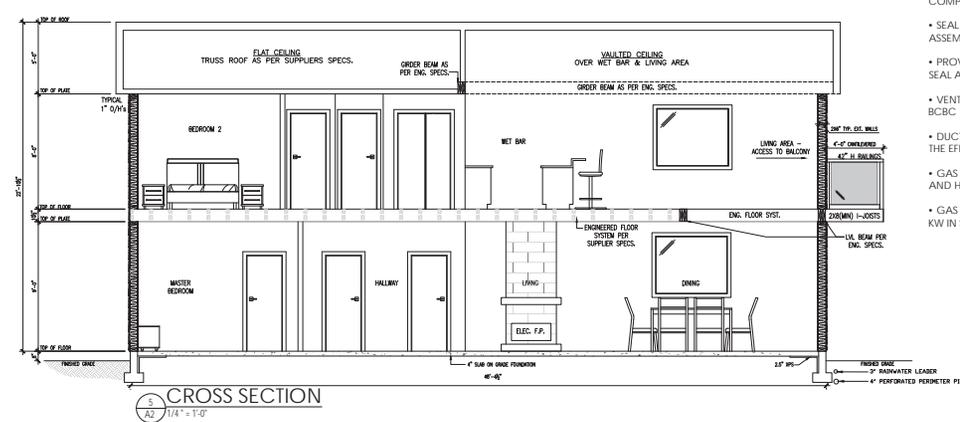
CLIMATE ZONE: 5

BUILDING ASSEMBLY	MINIMUM EFFECTIVE THERMAL RESISTANCE (RSI):
TYPICAL ROOFS	RSI 8.67 (R-49.23)
TYPICAL CATHEDRAL CEILINGS & FLAT ROOFS	RSI 4.67 (R-26.51)
TYPICAL EXTERIOR WALLS	RSI 2.97 (R-16.86)
TYPICAL FLOOR OVER UNHEATED SPACES	RSI 4.67 (R-26.51)
TYPICAL FOUNDATION WALLS	RSI 2.98 (R-16.92)
TYPICAL HEATED FLOORS	RSI 2.32 (R-13.17)
TYPICAL UNHEATED FLOORS ABOVE FROST LINE	RSI 1.96 (R-11.1)
TYPICAL UNHEATED FLOORS BELOW FROST LINE	UNINSULATED
TYPICAL WINDOWS & DOORS	US 1.8 U-VALUE & 21 MIN. ENERGY RATING

NOTE: CONTRACTOR MUST ADHERE TO THE NEW ENERGY EFFICIENCY REQUIREMENT CLIMATE ZONE 5 SECTION 9.36 OF THE BC BLDG. CODE

**ELEVATION NOTES**

- TORCH ON MEMBRANE ROOF
- HARDI BOARD & BATTEN SIDING
- HARDI SHINGLE SIDING
- 4" SLAB ON GRADE FOUNDATION



5 CROSS SECTION  
A2 1/4" = 1'-0"

**CEILING - TRUSSES @ 24" O.C.**

ASSEMBLY COMPONENT	R	RSI
1 ROOF SHEATHING	0.00	0.00
2 VENTED ROOF AIR SPACE	0.17	0.03
3 ROOF TRUSSES (2X10 SPRUCE)	26.4	4.65
4 POLYETHYLENE VAPOUR RETARDER	0.00	0.00
5 1/2" (12.7 MM.) GYPSUM BOARD	0.45	0.08
6 INTERIOR AIR FILM	0.62	0.11
7 AIR CAVITY, 19MM AIR SPACE	0.85	0.15
EFFECTIVE RSI / R VALUE - ENTIRE ASSEMBLY	<b>28.49</b>	<b>5.02</b>

**FLOOR ABOVE FROST LINE (UNHEATED)**

ASSEMBLY COMPONENT	R	RSI
1 POLYETHYLENE	0.91	0.16
2 CONCRETE FLOOR SLAB (4" THICK)	0.23	0.04
3 POLYETHYLENE	0.00	0.00
4 2" XPS (R-5 / IN.)	10.16	1.79
EFFECTIVE RSI / R VALUE - ENTIRE ASSEMBLY	<b>11.29</b>	<b>1.99</b>

NRC TABLES E.T.R. OPAQUE ASSEMBLIES

**ABOVE GRADE WALL - 2" X 6" @ 16" O.C.**

ASSEMBLY COMPONENT	R	RSI
1 EXTERIOR AIR FILM	0.17	0.03
2 HARD BOARD	0.68	0.12
3 BUILDING PAPER/HOUSE WRAP	0.00	0.00
4 7/16" OSB SHEATHING	0.62	0.11
5 2" X 6" FRAMING @16" O.C. W/ R-24 BATT	15.10	2.66
6 POLYETHYLENE VAPOUR RETARDER	0.00	0.00
7 1/2" GYPSUM BOARD	0.45	0.08
8 FINISH- 1 COAT PRIMER & LATEX PAINT	0.00	0.00
9 INTERIOR AIR FILM	0.68	0.12
EFFECTIVE RSI/R VALUE - ENTIRE ASSEMBLY	<b>17.70</b>	<b>3.12</b>

NRC CAN. GC. CA. TABLE WA-2

**ENERGY EFFICIENCY REQUIREMENTS**

- PART 9 PRESCRIPTIVE HEAT PUMP WITH FURNACE, 60 CFM FAN
- MAX 1 SONE SOUND RATINGS FOR PRIMARY EXHAUST SYSTEM
- PROVIDE SUPPLY AIR TO EACH BEDROOM
- ALL INTERIOR DOORS MUST BE UNDERCUT 12 MM. OR HAVE AIR TRANSFER GRILLS
- KITCHEN FANS ARE REQ'D TO EXHAUST AT A MIN RATE OF 100 CFM. BATH FANS ARE REQ'D TO EXHAUST AT A MIN RATE OF 50 CFM FOR INTERMITTENT RUNS AND 20 CFM FOR CONTINUOUS RUN FANS
- SUPPLY AIR INLET TO FORCED AIR HEATING FURNACE CABINET MUST BE LESS THAN 4.5 M. IN LENGTH
- THE JUNCTION LOCATION OF THE SUPPLY AIR INLET AND FURNACE AIR RETURN MUST BE LESS THAN 3.0 M. IN LENGTH
- INSULATE BEHIND WALL COMPONENTS PARALLEL WITH EFFECTIVE THERMAL RESISTANCE REQUIRED FOR THE WALL
- CONTINUOUS AIR BARRIER PER 9.36.2.9 BCBC - ACROSS JOINTS, BETWEEN ASSEMBLIES, AND AROUND PENETRATIONS (MIN 2" LAP)
- SEAL ALL JOINTS IN ENVELOPE BETWEEN STRUCTURAL COMPONENTS
- SEAL ALL JOINTS / JUNCTIONS BETWEEN WINDOW AND DOOR ASSEMBLIES AND AIR BARRIER MATERIAL
- PROVIDE SOLID BACKING FOR A / V BARRIER PENETRATIONS, SEAL AIRTIGHT
- VENTILATION REQUIREMENTS TO COMPLY WITH SECTION 9.36.3 BCBC
- DUCTS, PIPING, ELECTRICAL CABINETS ETC MUST NOT REDUCE THE EFFECTIVE INSULATING VALUES
- GAS FIRED FURNACE MUST BE < / > 220,000 BTU/HR (66 KW) IN SIZE AND HAVE AN AFUE RATING GREATER THAN OR EQUAL TO 92%
- GAS FIRED TANKLESS SWH MUST BE < / > 250,000 BTU/HR (73.2) KW IN SIZE WITH AN ENERGY FACTOR > / > 0.8



**DEREK & GWEN RONKAINEN**  
10485 LAKESHORE ROAD, PORT ALBERNI, B.C.

MARBAN CONSTRUCTION AND DESIGN  
112 Evelyn Crescent,  
Nanaimo BC, v9x 1a1  
250-616-9601

DATE: REVISED OCT. 26TH 2021  
PROJECT: NEW BUILD  
DRAWING: EXT. ELEVATIONS & SECTION  
SCALE: 1/4" = 1'-0"  
DRAWN BY: RACHEL BALAN  
DRAWING NO.



File: 89864

Civic: 10485 Lakeshore Road, Port Alberni, B.C.

Legal: Parcel A (DD 89825N) of Lot 3, District Lot 204, Alberni District, Plan 4600.

Dimensions are in metres and are derived from Plan 4600 and field survey.

This sketch does not constitute a redefinition of the legal boundaries hereon described and is not to be used in any matter which would assume same.

This sketch plan has been prepared in accordance with the Professional Reference Manual and is certified correct this 9th day of November, 2021.

Douglas Holme VXC3QR Digitally signed by Douglas Holme VXC3QR  
Date: 2021.11.09 12:57:12 -08'00'

This document is not valid unless originally signed and sealed or digitally signed by BCL.S.

B.C.L.S.

© Copyright 2021 J.E. Anderson & Associates. All rights reserved. No person may copy, reproduce, transmit or alter this document in whole or in part without the consent of the signatory.

The signatory accepts no responsibility or liability for any damages that may be suffered by a third party as a result of any decision made, or actions taken based on this document.

Subject to charges, legal notations, and interests shown on: Title No. CA8560545 (P.I.D. 005-983-819)

Scale 1:400



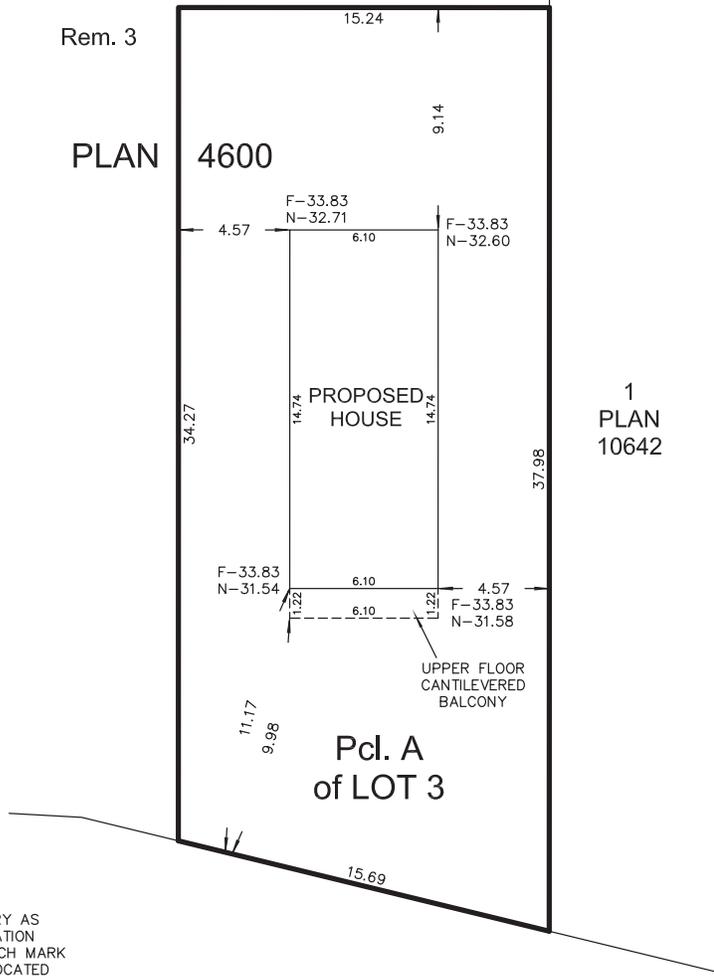
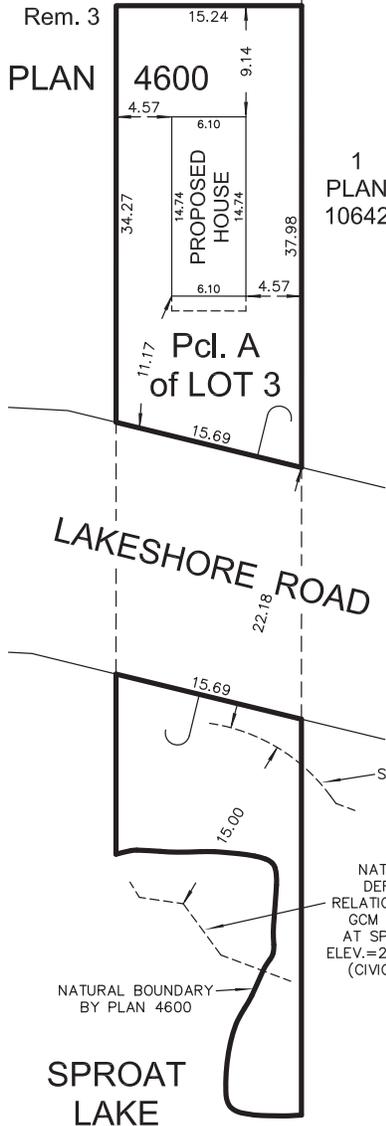
Datum for elevations, in metres, is geodetic (CGVD2013)

F- denotes finished grade as per building plans

N- denotes natural grade

Average natural grade = 32.11	Proposed main slab = 34.03
Average finished grade = 33.83	Proposed upper floor = 37.04
Maximum building height = 44.50	Proposed peak of roof = 41.31
Minimum flood construction level = 33.83	Proposed building height = 40.55

**DETAIL**  
Scale = 1:200



# GEOTECHNICAL FLOOD HAZARD ASSESSMENT

**Single-Family Residence**  
10485 Lakeshore Road,  
Port Alberni, BC, Sproat Lake,  
Alberni-Clayoquot Regional District

**Legal Address:**  
Parcel A Lot 3 Plan VIP4600 District Lot  
204 Land District 01 (DD 89825N),  
PID: 005-983-819

**Prepared For:**  
DBA Saywell Developments  
3103 West Road  
Nanaimo, BC, V9R 6X1

**Attention:**  
Mr. Don Saywell  
Saywellaccounts@shaw.ca

**October 29, 2021**

File No.: E0205.01  
Revision No.: 01  
Prepared by:  
John Hessels, ASCT  
Chris Hudec, M.A.Sc., P.Eng.

Lewkowich Engineering Associates Ltd.  
1900 Boxwood Road  
Nanaimo, BC, V9S 5Y2  
250-756-0355 (Office)  
250-756-3831 (Fax)  
[www.lewkowich.com](http://www.lewkowich.com)  
[geotech@lewkowich.com](mailto:geotech@lewkowich.com)

Permit to Practice Number: 1001802



**LEA** Lewkowich  
Engineering  
Associates Ltd.

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## DISCLAIMER

1. Lewkowich Engineering Associates Ltd. (LEA) acknowledges that this report, from this point forward referred to as “the Report,” may be relied upon by the Alberni-Clayoquot Regional District (ACRD) and their building inspectors as a precondition to the issuance of a development and/or building permit and that this Report and any conditions contained in the Report may be included in a restrictive covenant under Section 56 of the Community Charter and registered against the title of the property at the discretion of the ACRD.
2. This Report has been prepared in accordance with standard geotechnical engineering practice solely for and at the expense of DBA Saywell Developments. We have not acted for or as an agent of the ACRD in the preparation of this Report.
3. The conclusions and recommendations submitted in this Report are based upon information from relevant publications, a visual site-assessment of the property, anticipated subsurface soil conditions, available floodplain data, current construction techniques, and generally accepted engineering practices. No other warrantee, expressed or implied, is made. If unanticipated conditions become known during construction or other information pertinent to the structure becomes available, the recommendations may be altered or modified in writing by the undersigned.
4. This Report was authored, to the best of our knowledge at the time of issuance, with considerations for local requirements specific to the Authority Having Jurisdiction (AHJ) and their standards for the preparation of such reports, the 2018 British Columbia Building Code (BCBC), and current engineering standards. Updates to municipal bylaws, policies, or requirements of the AHJ, or updates to the BCBC and/or professional practice guidelines may impact the validity of this Report.
5. This Report has been prepared by Mr. John Hessels, and Mr. Chris Hudec, M.A.Sc., P.Eng. Messrs. Hessels and Hudec are both adequately experienced in geotechnical engineering and hazard assessments and are also members in good standing with their respective associations, Mr. Hessels with the Applied Science Technologists & Technicians of British Columbia (ASTTBC), and Mr. Hudec with the Engineers and Geoscientists of British Columbia (EGBC).

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## EXECUTIVE SUMMARY

1. The following is a brief synopsis of the property, assessment methods, and findings presented in the Report. The reader must read the Report in its entirety; the reader shall not rely solely on the information provided in this summary.
2. The property, 10485 Lakeshore Road, Sproat Lake, BC, from this point forward referred to as “the Property,” is located at Sproat Lake within the central region of Vancouver Island, west of the City of Port Alberni and within the jurisdictional boundaries of the ACRD.
3. A site-specific hazard assessment was conducted to identify potential geotechnical hazards for the subject Property. The primary geotechnical hazard identified relates to the Property’s boundary with Sproat Lake and flooding due to high lake levels, wind effects and wave run-up.
4. As part of our assessment, LEA reviewed the Somass Watershed Flood Management Plan report, prepared by Northwest Hydraulic Consultants Ltd (NHC), dated May 1, 2020. It was determined that the Flood Construction Level (FCL) for any future development relating to habitable residential construction at the subject Property is 33.83m (CGVD2013) and minimum set back of 15m from the high water mark.

### List of Abbreviations Used in the Report

Abbreviation	Title
ACRD	Alberni-Clayoquot Regional District
AHJ	Authority Having Jurisdiction
ASTTBC	Applied Science Technologists & Technicians of British Columbia
BCBC	British Columbia Building Code
DPA	Development Permit Area
EGBC	Engineers and Geoscientists of British Columbia
FCL	Flood Construction Level
FNB	Future Natural Boundary
GD	Geodetic Datum
LEA	Lewkowich Engineering Associates Ltd.
JEA	J.E. Anderson & Associates
MFLNRORD	BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
NB	Natural Boundary
NHC	Northwest Hydraulic Consultants Ltd.
PNB	Present Natural Boundary
SLOCP	Sproat Lake Official Community Plan



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## 1.0 INTRODUCTION

### 1.1 Background

- a. The Property is located at Sproat Lake within the central region of Vancouver Island, west of the City of Port Alberni. See Figure 1.1 below.



**Figure 1.1 – Large Scale Location Plan (Satellite Imaging from Google Earth®)**

- b. The proposed development for the Property at the time of this Report is a new residential dwelling.
- c. LEA understands the Property is located within the SLOCP area as marked on Map No. 1<sup>1</sup>. As per SLOCP Map No. 3, the Property is shown on to be within a DPA, specifically DPA-I Riparian Area<sup>2</sup>. An assessment report addressing DPA-I shall be prepared by a qualified environmental professional and is not included as part of this assessment.
- d. The current Alberni-Clayoquot Zoning By-law 1971<sup>3</sup> states:
- “Notwithstanding anything else contained in this By-law, except where relief is granted by the Water Resources Service of the Department of Lands, Forests and Water Resources, no building shall be constructed:*
- i. Within 7.62 meters [25 feet] of the natural boundary of a lake or within 30.48 meters [100 feet] of the natural boundary of any other natural water course or source of water supply (other than a well, which is governed by the Sanitary Regulations, 1917), or*

- ii. *on ground surface less than 0.609 meters [2 feet] above 200 Year flood level (other than flood caused by tsunami) where it can be determined, or, where it cannot be determined, 3.048 meters [10 feet] above the natural boundary of a lake or any other natural water course in the immediate flood hazard area.”*

The ACRD has prepared a draft update of their zoning bylaw (Zoning Bylaw No. P1333, 2020<sup>4</sup>), stating:

*“No building or structure shall be constructed, reconstructed, altered, moved or extended:*

- i. on ground less than 0.6 m above the 200-year-flood level where this level can be determined, or 3 m above the natural boundary of a lake or any major stream as defined by this Bylaw; or*
- ii. within 15 m of a minor stream and 30 m of a major stream; or*
- iii. within 15 m of any lake; or*
- iv. unless otherwise specified in this Bylaw, within 15 m of the natural boundary of the ocean; or*
- v. These restrictions do not apply to industrial and commercial buildings and structures where the use of the waterfront is a necessary subsidiary part of the business activity.”*

e. LEA understands that future development of the subject Property requires a geotechnical report stating what (if any) natural hazards exist that may impact the proposed development and make comment and recommendations for those hazards. The primary geotechnical hazard of concern for the Property relates to its proximity to Sproat Lake and potential flooding due to high lake levels, wind effects and wave run-up.

f. Our assessment, as summarized within this Report, is intended to meet the following objectives:

Determine if the land is or can be made geotechnically safe for the new single-family residence, with the probability of geotechnical failure resulting in property damage of less than;

- 2% in 50 years for seismic events,
- 1 in 200-year return for flooding of riverine and lacustrine areas,
- 10% in 50 years for all other geotechnical hazards.

g. Following EGBC’s Professional Practice Guidelines for Legislated Flood Assessments<sup>5</sup>, this Report would be categorized as a Class 0 assessment, applicable for developments related to:

- Renovations
- Expansions
- New single-family residence

- New duplex residence

h. In preparation of this Report we have reviewed the most current and relevant technical documents provided by NHC, EGBC and MFLNRORD, along with historical air photo data and the attached site-specific survey information provided by JEA.

## 1.2 Covenant Review

- a. As part of our assessment we have reviewed the documents registered on the legal title of the Property, specifically, any restrictive covenants registered against the Property that may relate to the conclusions and recommendations provided in this Report.
- b. Current to the date of this Report, there are no restrictive covenants registered against the Property.

## 2.0 SITE CONDITIONS

### 2.1 Physical Setting

- a. The Property is located in northwestern portion of the Faber Arm of Sproat Lake and within the Electoral Area D boundaries of the ACRD. The site is situated and accessed via Lakeshore Road. The Property location is shown below in Figure 2.1.

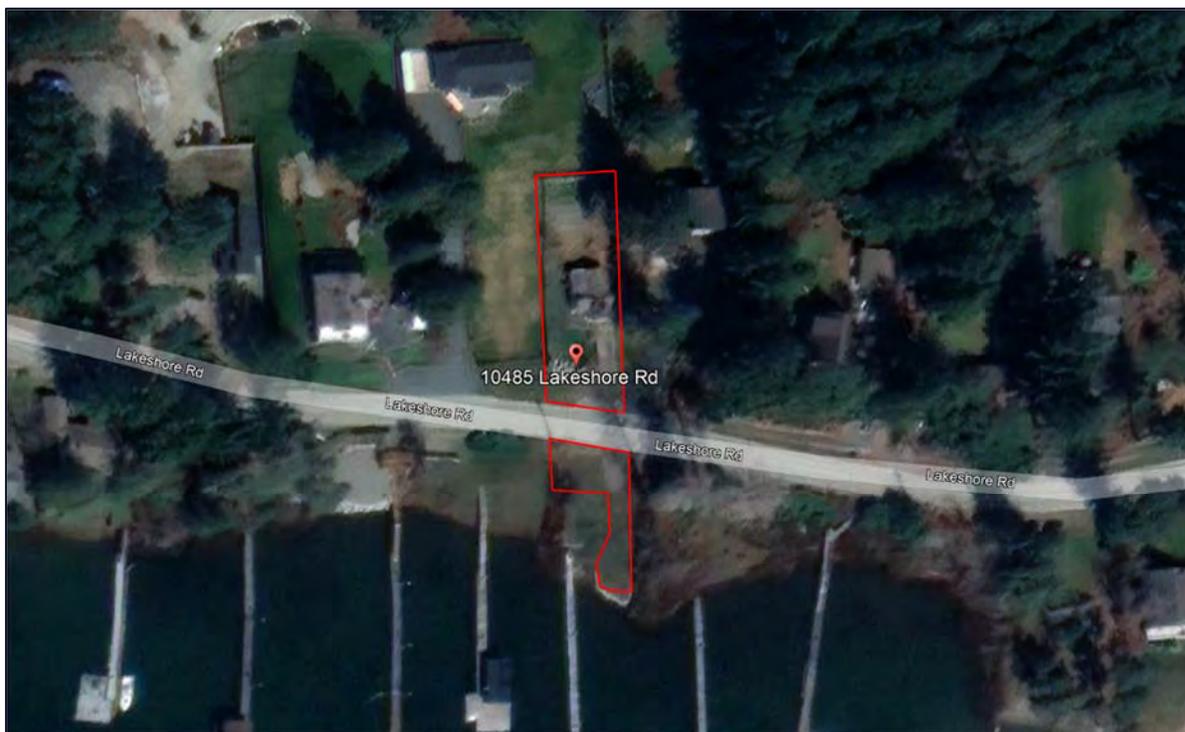


Figure 2.1 – Small Scale Location Plan (Satellite Imaging from Google Earth®)

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## 2.2 Terrain and Features

- a. Photos from September 6<sup>th</sup>, 2021 were supplied by the client to give a visual assessment of the current site conditions. The property is developed with a single family residence in the center of the property (above the road), with a small concrete walkway leading to Lakeshore Road.
- b. The topography of the northern portion of the Property is characterized by a shallow slope of approximately 15 Horizontal to 1 Vertical (15H: 1V). The southern foreshore portion is characterized by a similar 11H: 1V slope, with a steeper slope when joining with Lakeshore Road. The attached topographic survey prepared by JRE indicates a water level elevation of approximately 28.60m (CGVD2013). We have inferred this to be the PNB elevation and location for the Property.

## 2.3 Soil Conditions

- a. A subsurface investigation was not included as part of this assessment. Generally, subsurface soil conditions, as encountered by this office in similar investigations in the area, consist of a layer of topsoil, underlain by compact to dense, naturally deposited sand and gravel, and/or glacially-consolidated till at shallow depths.
- b. Published surficial geology mapping identifies the area as shallow moraine, glacial till generally less than 1m thick overlying bedrock<sup>6</sup>.

## 2.4 Surface and Groundwater Conditions

- a. No ponded or surface water could be observed from the site photos nor any evidence of abnormal groundwater conditions.
- b. Groundwater flows may fluctuate seasonally with cycles of precipitation. Groundwater conditions observed at other times may differ from those observed during our assessment.

## 2.5 Foreshore Conditions

- a. The foreshore can be characterized as a low-lying gravelly-sand beach bordered by a short rock wall along the eastern side. A shallow grassy slope (approximately 11H:1V or 5.1°) extends from the rock wall to a Lakeshore Road to the north.
- b. Vegetation along the foreshore consists of grasses, and sparse small plants. Well-established mature trees and foliage border the east and west foreshore property areas, with some mature trees located along the eastern side of the foreshore area. The general foreshore conditions at the time of the photographs can be seen below in Figure 2.5.



Figure 2.5 – Foreshore Conditions (View looking south)

### 3.0 FLOOD CONSTRUCTION LEVEL

#### 3.1 Somass Watershed Flood Management Plan Review

- a. In preparation of this Report we have reviewed the *Somass Watershed Flood Management Plan* report prepared by NHC, dated May 1, 2020<sup>7</sup>. The NHC report provides a detailed analysis including but not limited to, hydrology, geomorphology, hydraulic modelling, coastal assessment and wave modelling, to determine flood hazards for the Somass Watershed. We understand the Somass Watershed includes the Stamp, Ash, and Sproat Rivers; Great Central and Sproat Lake; and the Somass Estuary. Significant historical flood events were noted to have occurred at Sproat Lake in 1992, 2014, and 2016 where high water levels rose 4.86m. It is assumed this value is relative to static lake levels.
- b. The study includes floodplain maps with estimated flood boundaries and associated FCL elevations for Sproat Lake as based on the 1 in 200-year design flood event, including riverine and lacustrine climate change conditions. The FCL calculation uses a year-2100 static lake level of 32.58m (CGVD2013) for Sproat Lake including an estimated increase of overall discharge within the Somass Watershed of up to 20% by the year 2100<sup>8</sup>. Other components of the FCL calculation include wind set-up, seiche, wave effects relating to shoreline type, and freeboard.

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## 4.0 DISCUSSION AND RECOMMENDATIONS

### 4.1 Recommended FCL

- a. The shoreline of the subject Property consists of a gravelly-sand beach and shallow grassy slope running up to Shoreline Road. Based on the shoreline reach (SL-1) and shoreline type (grassy slope) the FCL for any future development on the Property relating to habitable residential construction is **33.83m (CGVD2013)**.

### 4.2 Recommended Setback

- a. Provincial guidelines recommend a minimum building setback of 15m from the natural boundary of any lake<sup>9</sup>. Climate change effects are expected to increase the still level of Sproat Lake by 0.6m by the year 2100<sup>7</sup>. Applying this increase to the PNB elevation of approximately 28.60m gives an estimated FNB elevation of 29.20m.
- b. Considering the lakeshore environment and gently-sloping shoreline, the erosion hazard is deemed low for the site. Therefore, mitigation measures related to shoreline erosion are not warranted for this Property.

### 4.3 Floodwater and Inundation

- a. In the event of a design flood event (1 in 200-year), floodwater from Sproat Lake will inundate the Property. The general risk of flooding is expected to increase with the effects of climate change and the associated rise in lake water levels.
- b. Provided any construction within the Property satisfies the minimum recommended FCL, we do not anticipate any damage to the structure or its contained goods as a result of floodwater. However, anything constructed or stored below the recommended FCL, such as crawlspaces, basements or storage rooms, could be subject to flood damage.
- c. Following best construction practices, areas below the FCL should not be used for the installation of furnaces, major electrical switchgear, or other fixed equipment susceptible to damage by floodwater.
- d. Based on the attached Site Plan, the existing ground elevations range from 28.60 to 33.88m (CGVD2013). Considering the existing low-lying topography within the Property, and the recommended FCL, it is possible the majority of the southern half of the Property (area below roadway) could flood during a design flood event with flood depths greater than 0.90m. However, the expected flooding would be forecasted and allow for evacuation prior to reaching maximum flood levels.

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## 4.4 Landfill and Site Grading

- a. If structural fill materials are used for foundation support, and include structural fills placed above existing site grades, further assessment may be required. Structural fills placed above existing grades may require protective measures from scour and erosion.
- b. Yard areas between the new single-family dwelling and the natural boundary should be sloped as to direct water away from the house and toward the foreshore area.
- c. Side yard areas adjacent to the new residence should be sloped as to direct potential flood waters around the house. Every effort must be made as to not direct surface water to neighbouring properties.

## 4.5 Local Government Conformance Statement

- a. LEA confirms that the recommendations made in this Report conform to the guidelines and objectives expressed under the current ACRD By-law 1971 (2018) and the proposed draft ACRD Zoning Bylaw No. P1333 (2020) for location and siting of structures.
- b. Sproat Lake is a defined body of water located to the south of the Property. All construction/development shall be carried out in conformance within the requirements of any jurisdictional limitations. Any jurisdictional limitations applicable to the Property and proposed development shall supersede the geotechnical recommendations made in this Report.

## 5.0 CONCLUSION

- a. Based on our review of the relevant publications and site-specific field assessment, it is the opinion of LEA that flooding from Sproat Lake is the only significant aspect, or potential geotechnical hazard within the subject Property.
- b. Provided the recommendations in this Report are followed, we (LEA) confirm that from a geotechnical point of view and reflecting Section 56 of the Community Charter, the lands may be used safely for the use intended, with the probability of a geotechnical failure resulting in property damage of less than:
  - 2% in 50-year for seismic events,
  - 1 in 200-year return for flooding of riverine and lacustrine areas, and
  - 10% in 50 years for all other geotechnical hazards.and that the proposed development will not result in a detrimental impact on the environment, subject Property or adjoining properties.
- c. Please refer to the attached EGBC - Appendix I: Flood Assurance Statement for additional information.

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## 6.0 CLOSURE

- a. Lewkovich Engineering Associates Ltd. appreciates the opportunity to be of service on this project. If you have any comments, or additional requirements at this time, please contact the undersigned at your convenience.

Respectfully Submitted,  
Lewkovich Engineering Associates Ltd.

A handwritten signature in black ink, appearing to read 'John Hessels', written over a faint, light-colored signature line.

John Hessels, ASCT  
Senior Technologist

Chris Hudec, M.A.Sc., P.Eng.  
Senior Project Engineer

## ATTACHMENTS

1. J.E. Anderson & Associates, Sketch Plan, Parcel A (DD 89825N) of Lot 3, District Lot 204, Alberni District;  
Dated August 9, 2021.
2. Engineers and Geoscientists British Columbia (EGBC) Appendix I: Flood Assurance Statement.

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## REFERENCES

1. Alberni-Clayoquot Regional District map, “Sproat Lake Map No. 1 Official Community Plan Area”.
2. Alberni-Clayoquot Regional District map, “Sproat Lake OCP Map No. 3 Development Permit Areas”, dated June 11, 2014.
3. Alberni-Clayoquot Regional District, “Alberni-Clayoquot Zoning By-law 1971”, updated May 3, 2018.
4. Alberni-Clayoquot Regional District, “Zoning Bylaw No. P1333, 2020”, dated July 31, 2020 Draft, accessed May 3, 2021.
5. Engineers and Geoscientists of British Columbia report titled “Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC,” version 2.1, dated August 28, 2018.
6. Ministry of Environment Mapping, Produced by R.H. Guthrie and C.R. Penner, titled “Vancouver Island Geology.”
7. Northwest Hydraulic Consultants Ltd., report titled “Somass Watershed Flood Management Plan”, Ref No. 3003140, dated May 1, 2020.
8. Northwest Hydraulic Consultants Ltd., document titled “*Appendix C: Coastal Assessment and Wave Modelling*”, Section 1.7.2, Table 16, Pg. 31.
9. Ministry of Water, Land and Air Protection Province of British Columbia report titled – Flood Hazard Area Land Use Management Guidelines. Amended by: Ministry of Forests, Land, Natural Resource Operations and Rural Development, 2018.



# FLOOD ASSURANCE STATEMENT

Note: This statement is to be read and completed in conjunction with the current Engineers and Geoscientists BC *Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC* (“the guidelines”) and is to be provided for flood assessments for the purposes of the *Land Title Act*, Community Charter, or the *Local Government Act*. Defined terms are capitalized; see the Defined Terms section of the guidelines for definitions.

To: The Approving Authority

Date: October 18, 2021 LEA File# E0205

Alberni-Clayquot Regional District

3008 5th Ave., Port Alberni, BC V9Y 2E3

Jurisdiction and address

With reference to (CHECK ONE):

- Land Title Act* (Section 86) – Subdivision Approval
- Local Government Act* (Division 7) – Development Permit
- Community Charter (Section 56) – Building Permit
- Local Government Act* (Section 524) – Flood Plain Bylaw Variance
- Local Government Act* (Section 524) – Flood Plain Bylaw Exemption

For the following property (“the Property”):

Parcel A Lot 3 Plan VIP4600 District Lot 204 Land District 01 (DD 89825N), PID: 005-983-819; 10485 Lakeshore Road

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a Qualified Professional and is a Professional Engineer or Professional Geoscientist who fulfils the education, training, and experience requirements as outlined in the guidelines.

I have signed, sealed, and dated, and thereby certified, the attached Flood Assessment Report on the Property in accordance with the guidelines. That report and this statement must be read in conjunction with each other. In preparing that Flood Assessment Report I have:

[CHECK TO THE LEFT OF APPLICABLE ITEMS]

\_\_\_ 1. Consulted with representatives of the following government organizations:

- 2. Collected and reviewed appropriate background information
- 3. Reviewed the Proposed Development on the Property
- 4. Investigated the presence of Covenants on the Property, and reported any relevant information
- 5. Conducted field work on and, if required, beyond the Property
- 6. Reported on the results of the field work on and, if required, beyond the Property
- 7. Considered any changed conditions on and, if required, beyond the Property
- 8. For a Flood Hazard analysis I have:
  - \_\_\_ 8.1 Reviewed and characterized, if appropriate, Flood Hazard that may affect the Property
  - \_\_\_ 8.2 Estimated the Flood Hazard on the Property
  - \_\_\_ 8.3 Considered (if appropriate) the effects of climate change and land use change
  - 8.4 Relied on a previous Flood Hazard Assessment (FHA) by others
  - \_\_\_ 8.5 Identified any potential hazards that are not addressed by the Flood Assessment Report
- 9. For a Flood Risk analysis I have:
  - \_\_\_ 9.1 Estimated the Flood Risk on the Property
  - \_\_\_ 9.2 Identified existing and anticipated future Elements at Risk on and, if required, beyond the Property
  - \_\_\_ 9.3 Estimated the Consequences to those Elements at Risk

## FLOOD ASSURANCE STATEMENT

10. In order to mitigate the estimated Flood Hazard for the Property, the following approach is taken:
- 10.1 A standard-based approach
  - 10.2 A Risk-based approach
  - 10.3 The approach outlined in the guidelines, Appendix F: Flood Assessment Considerations for Development Approvals
  - 10.4 No mitigation is required because the completed flood assessment determined that the site is not subject to a Flood Hazard
11. Where the Approving Authority has adopted a specific level of Flood Hazard or Flood Risk tolerance, I have:
- 11.1 Made a finding on the level of Flood Hazard or Flood Risk on the Property
  - 11.2 Compared the level of Flood Hazard or Flood Risk tolerance adopted by the Approving Authority with my findings
  - 11.3 Made recommendations to reduce the Flood Hazard or Flood Risk on the Property
12. Where the Approving Authority has not adopted a level of Flood Hazard or Flood Risk tolerance, I have:
- 12.1 Described the method of Flood Hazard analysis or Flood Risk analysis used
  - 12.2 Referred to an appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk
  - 12.3 Made a finding on the level of Flood Hazard or Flood Risk tolerance on the Property
  - 12.4 Compared the guidelines with the findings of my flood assessment
  - 12.5 Made recommendations to reduce the Flood Hazard or Flood Risk
13. Considered the potential for transfer of Flood Risk and the potential impacts to adjacent properties
14. Reported on the requirements for implementation of the mitigation recommendations, including the need for subsequent professional certifications and future inspections.

Based on my comparison between:

[CHECK ONE]

- The findings from the flood assessment and the adopted level of Flood Hazard or Flood Risk tolerance (item 11.2 above)
- The findings from the flood assessment and the appropriate and identified provincial or national guideline for level of Flood Hazard or Flood Risk tolerance (item 12.4 above)

I hereby give my assurance that, based on the conditions contained in the attached Flood Assessment Report:

- For subdivision approval, as required by the *Land Title Act* (Section 86), "that the land may be used safely for the use intended":

[CHECK ONE]

- With one or more recommended registered Covenants.
- Without any registered Covenant.

- For a development permit, as required by the *Local Government Act* (Sections 919.1 and 920), my Flood Assessment Report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

- For a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended":

[CHECK ONE]

- With one or more recommended registered Covenants.
- Without any registered Covenant.

- For flood plain bylaw variance, as required by the *Flood Hazard Area Land Use Management Guidelines* and the *Amendment Section 3.5 and 3.6* associated with the *Local Government Act* (Section 524), "the development may occur safely".
- For flood plain bylaw exemption, as required by the *Local Government Act* (Section 524), "the land may be used safely for the use intended".

# FLOOD ASSURANCE STATEMENT

I certify that I am a Qualified Professional as defined below.

**October 18, 2021**

Date

**Chris Hudec**

Prepared by

**Chris Hudec**

Name (print)



Signature

**1900 Boxwood Road**

Address

**Nanaimo, BC, V9S 5Y2**

**(250) 756 0355**

Telephone

**chudec@lewkowich.com**

Email

Reviewed by

Name (print)

Signature



(Affix PROFESSIONAL SEAL here)

If the Qualified Professional is a member of a firm, complete the following:

I am a member of the firm **Lewkowich Engineering Associates Ltd.**

and I sign this letter on behalf of the firm.

(Name of firm)